

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Szentistvany	Group Art Unit: 3654
Application No.: 10/524,122	Examiner: Stefan Kruer
Filed: 2/10/2005	Confirmation No: 2656
Title: Safety Device for Stairlifts	
Attorney Docket No.: URQU.P-014	
Customer No.: 57381	

## Substitute: BRIEF FOR APPELLANT

This brief is filed in support of Applicants' Appeal from the office action mailed June 26, 2007. Consideration of the application and reversal of the rejections are respectfully urged.

Real Party in Interest

The real party in interest is Stannah Stairlifts Limited.

Related Appeals and Interferences

To Applicants' knowledge there are no related appeals or interferences.

Status of Claims

Claims 1-14 and 20 are pending in the present application. Claims 1-12 are rejected and herein appealed. Claim 20 is objected to as being dependent on a rejected base claim (i.e. claim 5) but is otherwise allowable. Claims 13 and 14 are allowed. Claims 15-19 are canceled.

Status of Amendments

No amendment after final rejection have been made.

Summary of Claimed Subject Matter

The claims of the present invention relate to stairlifts that can transport a passenger up and down a set of stairs (Page 1 lines 3-4 of the specification). Independent claim 1, and dependent claims 2-7 based thereon, claim a stairlift comprising a stairlift rail (Page 10 line 11 of the specification, item 13 in Figure 1); a carriage mounted on said rail for movement there along (Page 10 lines 7-11 of the specification, item 12 in Figure 1); a chair mounted on said carriage (Page 10 line 9 of the specification, item 11 in Figure 1); over-speed braking means operable to brake said carriage from further movement on said rail when the speed of said carriage on said rail exceeds a pre-determined maximum speed (Page 11 lines 7-10 of the specification, item 21 in Figure 1), and angle determining means for determining out-of-level positions of said chair (Page 11 lines 14-16 of the specification, item 22 in Figure 1), said angle determining means being capable of causing actuation of said over-speed braking means (Page 12 lines 23-25 of the specification, item 21 in Figure 1).

Independent claim 8 claims control means for the stairlift assembly. The stairlift comprises: a stairlift rail having rail sections which, when installed, are arranged at different angles to a horizontal plane (Page 10 lines 14-16 of the specification, item 13 in Figure 1); a carriage mounted on said rail for movement there along (Page 10 lines 7-11 of the specification, item 12 in Figure 1); a chair pivotally mounted on said carriage (Page 10 lines 7-11 of the specification, item 11 in Figure 1); braking means operable to brake said carriage with respect to said rail (Page 11 lines 7-10 of the specification, item 21 in Figure 1); speed sensing means operable to sense the speed of said carriage along said rail (Page 13 lines 2-4 of the specification, item 12 in Figure 2); and angle sensing means operable to sense positions of said chair at which the angle thereof with respect to said horizontal plane is at or in excess of a limit (Page 13 lines 1-2 of the specification, item 22 in Figure 1); said control means including a microprocessor operable to receive signals from said speed sensing means and from said angle sensing means,

and to generate a command to operate said braking means in response to said speed sensing means sensing a carriage speed in excess of a predetermined maximum, or said angle sensing means sensing a chair angle in excess of a predetermined maximum (Page 13 lines 4-8 of the specification, item 21 in Figure 1 and/or item 12 in Figure 2).

Independent claim 9 claims a method of controlling a stairlift. The stairlift comprises a stairlift rail having rail sections which, when installed, are arranged at different angles to a horizontal plane (Page 10 lines 14-16 of the specification, item 13 in Figure 1); a carriage mounted on said rail for movement there along (Page 10 lines 7-11 of the specification, item 12 in Figure 1); a chair mounted on said carriage (Page 10 lines 7-11 of the specification, item 11 in Figure 1); braking means operable to brake said carriage with respect to said rail (Page 11 lines 7-10 of the specification, item 21 in Figure 1); speed sensing means operable to sense the speed of said carriage along said rail (Page 13 lines 2-4 of the specification, item 12 in Figure 2); and angle sensing means operable to sense positions of said chair at which the angle thereof with respect to said horizontal plane is at or in excess of a limit (Page 13 lines 1-2 of the specification, item 22 in Figure 1). The method comprises the steps of monitoring the speed of said carriage along said rail and monitoring the angle of said chair with respect to the horizontal and, in the event either said speed or said angle depart from predetermined limits, causing said braking means to be operated (Page 13 lines 1-8 of the specification item 21 in Figure 1 and/or item 12 in Figure 2).

Independent claim 10 claims a method of testing the operation of an over-speed governor (Page 17 lines 1-3 of the specification, item 30 in Figure 3). The over-speed governor is included within a stairlift carriage and acting in combination with electronic speed sensing means and a governor actuation circuit (Page 17 lines 10-16 of the specification). The method comprising the steps of simulating an electrical signal indicative of carriage speed, applying said signal to said governor actuation circuit and observing a response of said governor (Page 17 lines 4-8 of the specification).

Independent claim 11, and dependent claim 12 based thereon, claims a stairlift carriage for movement along a stairlift rail. The carriage comprising a drive motor operable to

drive said carriage along side rail (Page 10 lines 12-15 of the specification, item 16 in Figure 3); an over-speed governor operable to brake said carriage with respect to said rail (Page 11 lines 7-10 of the specification, item 21 in Figure 1); limit engagement means operable independently of said over-speed governor and positioned to physically engage ultimate stops provided at each end of the rail (Page 15 line 19 -Page 16 line 7 of the specification, items 67 and 71 in Figure 3), said ultimate stops physically preventing displacement of said carriage from said rail (*Id.*), wherein said over-speed governor and said limit engagement means actuate a common isolation switch thereby cutting power to said drive motor (page 15 line 25 to page 16 line 1).

#### Grounds of Rejection to be reviewed on Appeal

(1) Claims 1-9 are rejected under 103 as obvious over Watson (GB 2,339,419) in view of Jones et al. (GB2,322,450).

(2) Claims 10-12 are rejected under 103 as obvious over the combination of Gisske (US 4,904,916) and Bartlet (US 5,230,405).

#### Argument

**(1) Claims 1-9 are rejected under 103 as obvious over Watson (GB 2,339,419) in view of Jones et al. (GB2,322,450).**

#### **CLAIMS 1-9 ARE NOT OBVIOUS:**

The Examiner's rejections of claims 1-9 are made in error and must be reversed. In considering the patentability of claims 1-9, the factual issues are straightforward. Stair lifts with over-speed governors that limit the maximum speed of the chair by applying a brake to slow the movement of the chair along the rail are common in the art. There are also mechanisms for controlling the seat or chair angle to prevent it from tipping and causing the passenger to fall from the chair. What the art **DOES NOT PROVIDE**, and what is provided by this invention is

an interconnection between these two sets of controls so that the brake that controls the speed of the chair along the rail is activated in response to excessive chair angle as well as excessive speed.

*The Combination of Watson and Jones:*

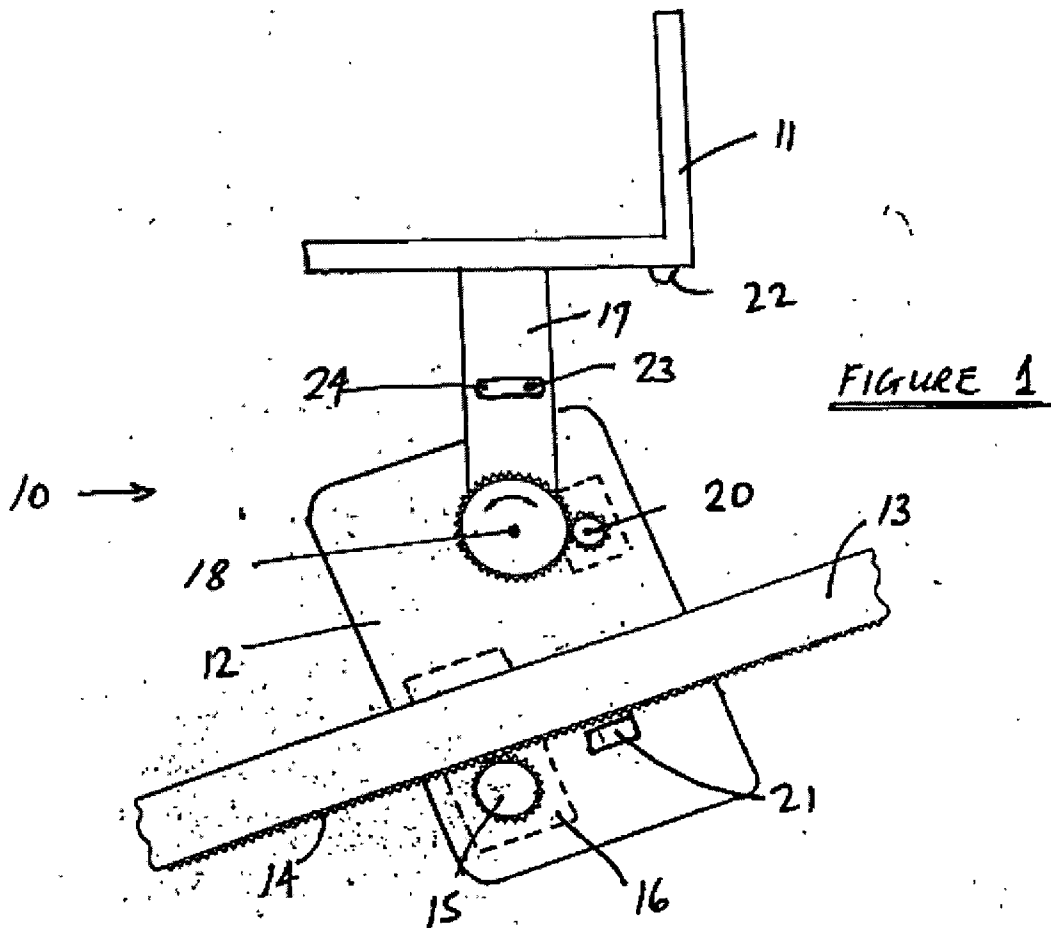
The Examiner offers a combination of two references, Watson (GB 2,339,419) and Jones (GB2,322,450), as suggesting the claimed combination of the two sets of controls. Watson teaches the conventional stair lift with an over-speed governor for slowing the speed of the carriage along a rail. Jones also relates to stair lifts, and in particular to control of the angle of the chair. Jones happens to make a cursory reference to the word "brake" in the context of a response to excessive chair angle. Namely, Jones discloses at the second paragraph on page 4 that, "should the seat become displaced by more than a present amount of say, + or - 5Deg then some sort of Brake is engaged."

The Examiner incorrectly contends that Jones' cursory reference to "some sort of Brake" could mean an over-speed governor acting between the carriage and the rail to slow the speed of the carriage and accompanying chair along the rail. *See* the June 26, 2007 office action, Page 4 third paragraph. The Examiner then incorrectly concludes, "Jones, therefore, introduces the concept of braking should the chair, while following the changing gradient as designed for 'normal stairlift operating speeds', be displaced beyond a set (maximum) angle of deviation." *Id.* at page 7 second paragraph. The statement of what the reference could mean does not lead to the conclusion **UNLESS** that is the way the teaching would be interpreted by the artisan.

The word "brake" has multiple possible meanings in the art. As demonstrated in the Panel's Decision of November 30, 2007 the word "brake" can be used to describe a mechanism (e.g. an over-speed governor) used to slow movement of a vehicle (e.g. a carriage along the length of a rail). Another possible meaning of the word "brake" may be used to describe a mechanism for stopping angular movement of the carriage relative to the axis of the rail should a maximum offset be reached. The Examiner has conveniently chosen the former meaning which supports his rejection of the present claims despite the absence of any objective

evidence that this is the correct interpretation and despite being confronted with declaration evidence that demonstrates that his interpretation should be employed. In fact, the Examiner has failed to provide any support for his interpretation of the word and has failed to address the evidence presented in said declaration.

Jones disclosure is solely concerned with a system for controlling seat or chair angle on a stairlift. The "brake" referred to in Jones is not a speed brake for slowing the chair along the length of the rail. Rather, the cited section of Jones deals with angular rotation of the chair relative to a horizontal axis. **Jones' "brake" device is common** in the stairlift art. For example, components labeled 23 and 24 in Figure 1 of the present application are exemplary of such a device. Namely, as described in the third full paragraph on page 11 and in European Patent 0738 232, when the angular limit of the chair 11 is reached, a mechanical interlock such as pin 23 acting in slot 24 may also be triggered to prevent the chair 11 going further off-level.



These common types of "brake" devices prevent the chair from exceeding a predetermined angle from horizontal (e.g. "say, + or - 5Deg" see page 4 paragraph 2 of Jones) and thereby prevent a

passenger from falling/sliding out of the chair due to excessive chair angle. These “brakes” are not the speed control “brakes” of the present invention.

*The Rule 132 Declaration Evidence:*

As indicated above, Applicant submitted declaration evidence in this case supporting his contention and demonstrating that the Examiner’s interpretation of Jones’ “brake” was incorrect. *See* the 132 declaration filed on April 26, 2006 a copy of which is attached. In particular the declaration reads:

3. The Jones disclosure is solely concerned with chair angle control and makes no mention whatsoever of a carriage over-speed limiting device for stairlifts.
4. While Jones does disclose that deviation of the seat beyond a certain angle range may lead to the engagement of “some sort of brake”, Jones does not disclose nor in any way allude to the possibility of triggering an over-speed braking means through a chair-angle determining means.
5. As one skilled in the art of stairlifts, after reading the Jones disclosure, it is my opinion that the “brake” of Jones is something equivalent to components 23 and 24 in Fig. 1 of the present invention. Namely, it is not an over-speed governor according to the present invention, rather it is a brake to prevent excessive rotation of the chair.
6. Therefore, Jones **fails** to introduce the concept of braking the speed of his stairlift should the chair be displaced beyond a set (maximum) angle of deviation as required in claims 1-9 of the present invention.



The Examiner has failed to comment on this evidence. The Examiner has failed to provide any reason why this evidence is not correct or is not to be believed. In other words, the Examiner has simply ignored the declaration.

Applicant submits that the Examiner has failed to make a prima facie case for obviousness against claims 1-9 and Applicant submits that these claims are not obvious over Watson in view of Jones.

**(2) Claims 10-12 are rejected under 103 as obvious over the combination of Gisske (US 4,904,916) and Bartlet (US 5,230,405).**

**CLAIMS 11-12 ARE NOT OBVIOUS:**

The Examiner's rejection of independent claim 11 and dependent claim 12 as unpatentable over Gisske in view of Bartlet is in clear error and must be reversed. Claim 11 reads:

11. A stairlift carriage for movement along a stairlift rail, said carriage comprising a drive motor operable to drive said carriage along side rail; an over-speed governor operable to brake said carriage with respect to said rail; limit engagement means operable independently of said over-speed governor and positioned to physically engage ultimate stops provided at each end of the rail, said ultimate stops physically preventing displacement of said carriage from said rail, wherein said over-speed governor and said limit engagement means actuate a common isolation switch thereby cutting power to said drive motor.

The Examiner incorrectly contends that Gisske discloses "...limit engagement means (60, 58) operable independently of said over-speed governor and positioned to engage limit stops (14, 16)...". See page 5 of the office action. The Examiner further incorrectly

contends that Gisske discloses "...and wherein said over-speed governor and said limit engagement means actuate a common isolation switch to disengage the drive motor". *Id.*

The limit engagement means of the present claim physically engage the recited ultimate stops provided at the end of the rail to physically prevent the carriage from falling off the end of the rail. The Examiner's incorrectly contends that Gisske's "limit engagement means (60, 58)", which Gisske calls stationary infrared transmitter module (60) and mobile infrared receiver module (58), engage limit stops which Gisske calls stairway landings (14, 16). Gisske's modules (60, 58) are infrared transmitters and receivers and they do not physically engage one another as is required by the present claims. Furthermore Gisske's modules (60, 58) would not be understood by a person skilled in the art as constituting 'ultimate' stops according to the claims. Regulations governing the design of stairlifts specifically exclude, for safety reasons, electronic devices (such as Gisske's infrared transmitter modules (60, 58)) being used as ultimate limit stops. Applicant provided declaration evidence establishing this fact. *See* the attached 132 declaration filed on April 26, 2006. The declaration reads:

8. I have reviewed claim 11 in light of Gisske et al. The infrared transmitter modules 58 and 60 described in Gisske are not, and could not be, ultimate limit switches. They merely provide a means of communicating between the carriage and the external drive motor, to control movement and speed of the carriage along the rail. Physical safety switches must always be provided in addition to these motion control devices. Regulations governing stairlift design require physical ultimate limit stops, such as components 71 in Figures 3 & 5 of the present application, to be provided on the rail. Complementary positive break electro-mechanical switches must also be provided on the carriage so that, when the carriage engages the ultimate limit stops, power is cut to the carriage drive motor. Claim 11 offers a particular arrangement where the switch used to cut power when the carriage engages the ultimate limit stops, is the same switch which operates when the over-speed governor is triggered.

The Examiner has failed to comment on this evidence. The Examiner has failed to provide any reason why this evidence is not correct or is not to be believed. In other words, the Examiner has simply ignored it.

Assuming arguendo that the Examiner's interpretation were correct that modules (60, 58) of Gisske were 'ultimate' limit stops (which they are not), Bartlet shows the provision of the physical ultimate limit stops in the form of bumpers 103 that are positioned to engage and trigger limit switches 105 provided on the carriage. There is no mention of an over-speed governor as required by claims 11 and 12 in Bartlet. One skilled in the art, could not form an accurate or realistic view as to how physical elements which are not described (the ultimate limit stops) might operate in conjunction with the over-speed governor, as required in claims 11 and 12.

Applicant therefore submits that the Examiner has failed to make a prima facie case for obviousness against claims 11 and 12 and Applicant submits that these claims are not obvious over Gisske and Bartlet.

#### **CLAIM 10 IS NOT OBVIOUS:**

The Examiner's rejection of claim 10 as unpatentable over Gisske in view of Bartlet is in clear error and must be withdrawn. Claim 10 reads:

10. (previously presented) A method of testing the operation of an over-speed governor included within a stairlift carriage, said governor acting in combination with electronic speed sensing means and a governor actuation circuit, said method comprising the steps of simulating an electrical signal indicative of carriage speed, applying said signal to said governor actuation circuit and observing a response of said governor.

The testing method claimed is specific to a stairlift having an over-speed governor responsive to an electronic speed sensing means. While Gisske acknowledges the existence of an over-speed governor, there is no description given of the form of the governor (i.e. no disclosure

that it is responsive to electronic speed sensing means) and no deduction can therefore be made as to how that governor might be assembled and tested. Bartlett makes no mention of an over-speed governor, let alone one acting in combination with electronic speed sensing means.

Applicant therefore submits that the Examiner has failed to make a prima facie case for obviousness against claim 10 and Applicant submits that claim 10 is not obvious over Gisske and Bartlet.

**CONCLUSION:**

For these reasons, Applicant requests the Board to overturn the Examiner's rejections and Applicant submits that this application is now considered to be in condition for allowance. Such actions are earnestly solicited.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Marina T. Larson", is written over a horizontal line.

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**Claims Appendix:**

1. A stairlift comprising a stairlift rail; a carriage mounted on said rail for movement there along; a chair mounted on said carriage; over-speed braking means operable to brake said carriage from further movement on said rail when the speed of said carriage on said rail exceeds a pre-determined maximum speed, and angle determining means for determining out-of-level positions of said chair, said angle determining means being capable of causing actuation of said over-speed braking means.
2. A stairlift as claimed in claim 1 wherein said over-speed braking means comprises speed sensing means operable to sense, electronically, the speed of said carriage along said rail.
3. A stairlift as claimed in claim 2 wherein said speed sensing means comprises a roller in rolling contact with said rail; and means to determine the speed of rotation of said roller.
4. A stairlift as claimed in claim 3 wherein said speed sensing means comprises at least one magnet which rotates with said roller; and a pick up operable to generate an electromagnetic signal from the passage of said magnet thereby, said pick-up providing a speed output signal representative of the speed of rotation of said roller.
5. A stairlift as claimed in claim 4 wherein, in the event of said speed output signal indicating a speed in excess of the pre-determined maximum carriage speed, said over-speed braking means triggers a solenoid to engage said over-speed braking means with said roller and, thereby, cause a braking member to engage with said rail.
6. A stairlift as claimed in claim 1 wherein said over-speed braking means is provided, in part, by a microprocessor, said microprocessor being programmed to receive a speed output signal and, in response to said speed output signal indicating a speed in excess of said pre-determined

carriage speed, to generate a command to trigger a solenoid to engage said over-speed braking means.

7. A stairlift as claimed in claim 6 wherein said microprocessor is further programmed to receive a signal from said angle determining means and, in response to said angle determining means indicating a chair angle in excess of a predetermined angle from the horizontal, to generate a command to trigger said solenoid.

8. Control means for a stairlift, said stairlift comprising: a stairlift rail having rail sections which, when installed, are arranged at different angles to a horizontal plane; a carriage mounted on said rail for movement there along; a chair pivotally mounted on said carriage; braking means operable to brake said carriage with respect to said rail; speed sensing means operable to sense the speed of said carriage along said rail; and angle sensing means operable to sense positions of said chair at which the angle thereof with respect to said horizontal plane is at or in excess of a limit; said control means including a microprocessor operable to receive signals from said speed sensing means and from said angle sensing means, and to generate a command to operate said braking means in response to said speed sensing means sensing a carriage speed in excess of a predetermined maximum, or said angle sensing means sensing a chair angle in excess of a predetermined maximum.

9. A method of controlling a stairlift, said stairlift comprising: a stairlift rail having rail sections which, when installed, are arranged at different angles to a horizontal plane; a carriage mounted on said rail for movement there along; a chair mounted on said carriage; braking means operable to brake said carriage with respect to said rail; speed sensing means operable to sense the speed of said carriage along said rail; and angle sensing means operable to sense positions of said chair at which the angle thereof with respect to said horizontal plane is at or in excess of a limit; said method comprising the steps of monitoring the speed of said carriage along said rail and

monitoring the angle of said chair with respect to the horizontal and, in the event either said speed or said angle depart from predetermined limits, causing said braking means to be operated.

10. A method of testing the operation of an over-speed governor included within a stairlift carriage, said governor acting in combination with electronic speed sensing means and a governor actuation circuit, said method comprising the steps of simulating an electrical signal indicative of carriage speed, applying said signal to said governor actuation circuit and observing a response of said governor.

11. A stairlift carriage for movement along a stairlift rail, said carriage comprising a drive motor operable to drive said carriage along side rail; an over-speed governor operable to brake said carriage with respect to said rail; limit engagement means operable independently of said over-speed governor and positioned to physically engage ultimate stops provided at each end of the rail, said ultimate stops physically preventing displacement of said carriage from said rail, wherein said over-speed governor and said limit engagement means actuate a common isolation switch thereby cutting power to said drive motor.

12. A carriage as claimed in claim 11 wherein said limit engagement means conveys a charging current from said rail to a battery located within said carriage.

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**Evidence Appendix**

(1) April 26, 2006 - Rule 132 Declaration



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Szentistvany	
Application No.: 10/524,122	Group Art Unit: 3654
Filed: 2/10/2005	Examiner: Stefan Krueer
Title: Safety Device for Stairlifts	Confirmation No: 2656
Attorney Docket No.: URQU.P-014	
Customer No.: 57381	

**DECLARATION UNDER RULE 132**

I, the undersigned, hereby declare as follows:

1. I am the named inventor of the above-captioned application. As such, I am familiar with the application, including the claims. Furthermore, I am a person skilled in the art of stairlifts.
2. I have reviewed the Official Action mailed November 2, 2006 and the references cited therein, namely: GB 2,339,419 A (Watson); GB 2,322,450 A (Jones); US 4,904,916 (Gisske); and US 5,230,405 (Bartlet).
3. The Jones disclosure is solely concerned with chair angle control and makes no mention whatsoever of a carriage over-speed limiting device for stairlifts.

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Declaration Under Rule 132

4. While Jones does disclose that deviation of the seat beyond a certain angle range may lead to the engagement of "some sort of brake", Jones does not disclose nor in any way allude to the possibility of triggering an over-speed braking means through a chair-angle determining means.
5. As one skilled in the art of stairlifts, after reading the Jones disclosure, it is my opinion that the "brake" of Jones is something equivalent to components 23 and 24 in Fig. 1 of the present invention. Namely, it is not an over-speed governor according to the present invention, rather it is a brake to prevent excessive rotation of the chair.
6. Therefore, Jones fails to introduce the concept of braking the speed of his stairlift should the chair be displaced beyond a set (maximum) angle of deviation as required in claims 1-9 of the present invention.
7. Mr. Peter Jones, the first inventor named in GB 2,322,450 is personally known to me. Further, I am aware of a stairlift which includes the seat levelling invention described in Jones et al. This stairlift has a conventional form of mechanical over-speed governor which is triggered by centrifugal force alone. There is no connection or association between the seat levelling mechanism and the over-speed governor.
8. I have reviewed claim 11 in light of Gisske et al. The infrared transmitter modules 58 and 60 described in Gisske are not, and could not be, ultimate limit switches. They merely provide a means of communicating between the carriage and the external drive motor, to control movement and speed of the carriage along the rail. Physical safety switches must always be provided in addition to these motion control devices. Regulations governing stairlift design require physical ultimate limit stops, such as components 71 in Figures 3 & 5 of the present application, to be provided on the rail.

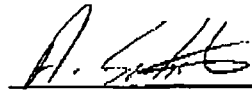
Appin No.: 10/524,122  
Declaration Under Rule 132

Complementary positive break electro-mechanical switches must also be provided on the carriage so that, when the carriage engages the ultimate limit stops, power is cut to the carriage drive motor. Claim 11 offers a particular arrangement where the switch used to cut power when the carriage engages the ultimate limit stops, is the same switch which operates when the over-speed governor is triggered.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

dated:

27/03/07

  
\_\_\_\_\_  
Andreas Csaba Szentistvany

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**Related Proceedings Appendix**

None